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11 August 1978

WORLD

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TRANSLATIONS ON TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 49

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TRANSLATIONS ON TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 49

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QUALITIES OF BULGARIAN RADIO-TELEPHONES DESCRIBED

Sofia BULGARIAN FOREIGN TRADE in English No 3, 1978 pp 20-21

/Article by H. Yankova/

/Text/ Radiotelephones and radio-stations, which find wide employment in industry, agriculture, fire prevention and emergency medical aid, figure prominently in the export list of Electroimpex. These come in three versions: mobile, stationary and portable.

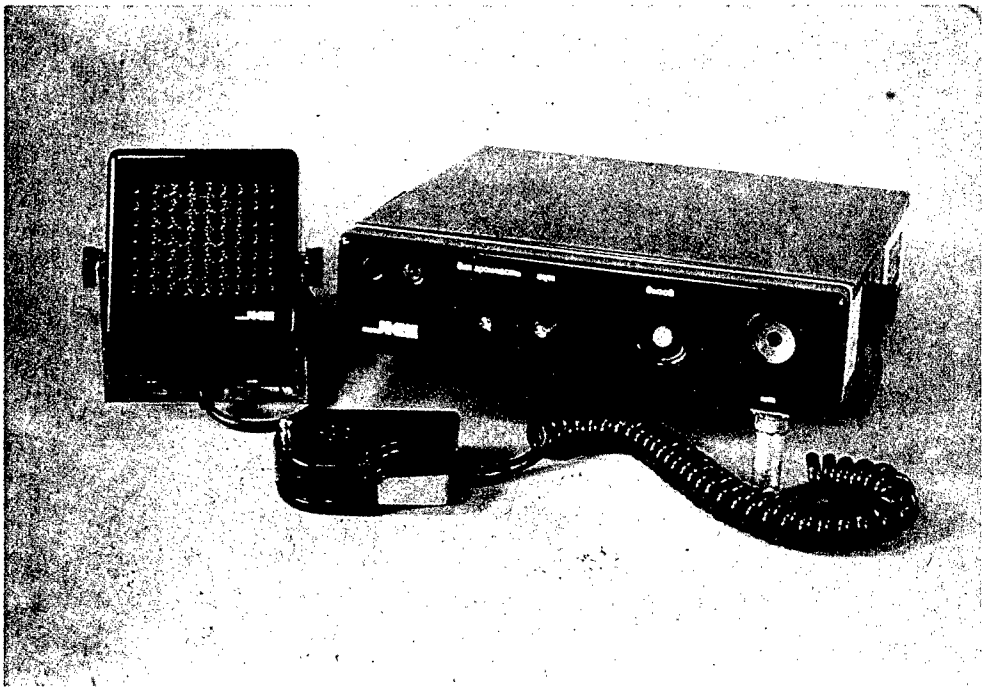
The RT--23 radio-station, made of silicon semiconductors, finds all-purpose application and serves as basis for various modifications. One of the latter is the RT—23—10 radio-station, which functions in variable climatic conditions, in a temperature range from —25° to -55°C and up to 98 per cent humidity; moreover, it is protected against humidity and dust. Depending on the relief of the locality, it ensures radio connections from 15 up to 80 km. The station comes with a control desk equipped with all the necessary organs. It has an inbuilt system for selective dialling with a maximum number of subscribers -- 66. Thanks to its compactness, small size and weight, as well as low power consumption, RT 23--10 finds wide employment in the economy.

The pocket radio-stations with amplitudemodulation, types RSD --67 ChM, RSD—68 ChM and RSD--69 ChM, are completely transistorized receiver-transmitters for bilateral symplex connection between mobile objects. They are up to international requirements for apparatus of this type and are made on the basis of integrated-hybrid cir-

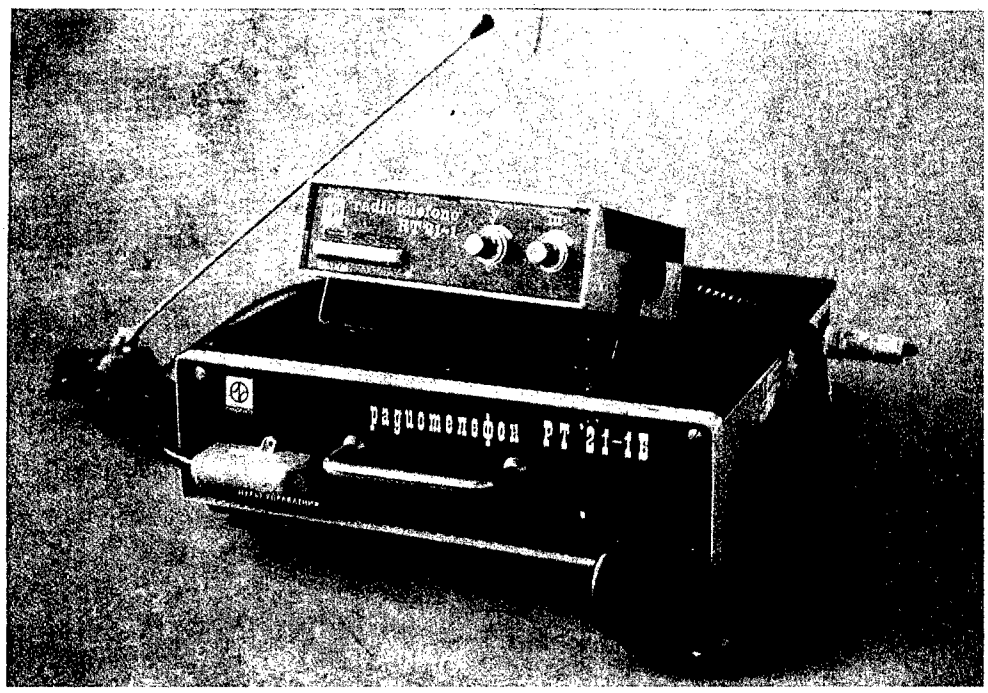
cuits. The radiotelephones are built-in in cast-under-pressure boxes of light material, which lends them strength and protection from rain and dust and permits effective electric screening from side signals. An easily replaceable nickel-cadmium battery ensures reliable 8-hour work in an 8:1 reception-transmission ratio and can be charged more than 200 times.

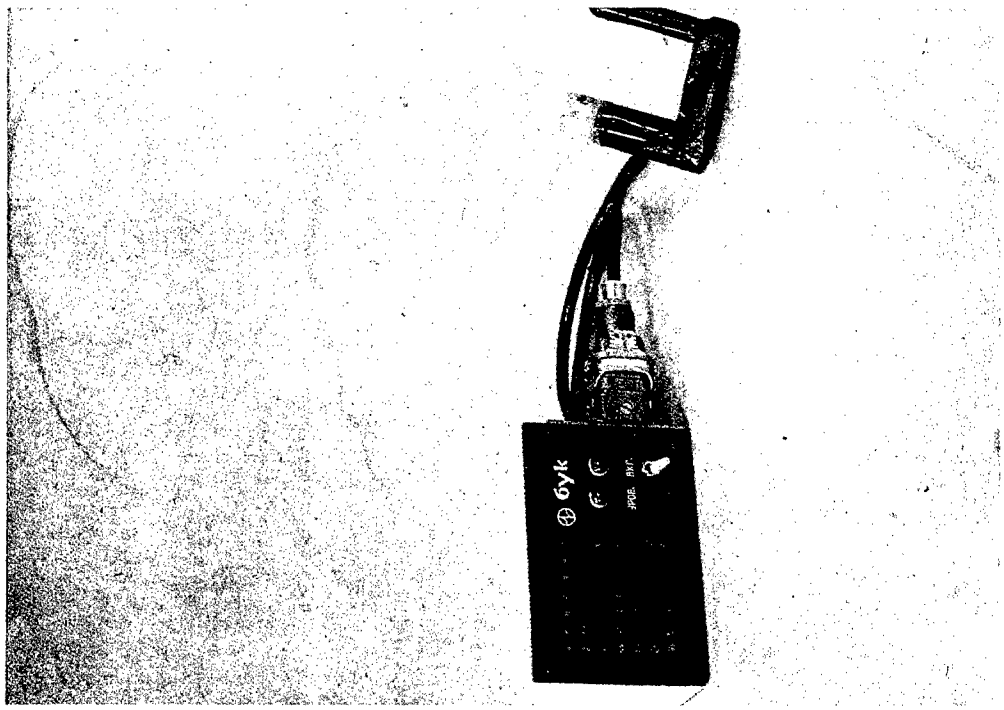
The Len radio-station is a joint development of the Sofia Institute for Special Electronics and the Voronezh Communication Research Institute in the USSR. It is one of the best models of this type, thanks to its small size and weight, high sensitivity and minimal power consumption. Completely transistorized and made of semiconductor elements, it weighs only 3.5 kg, functions for over 2,600 hours in a temperature range of -25 to +50°C and has a radius of action exceeding 30 km. Len has a logical light indication which supplies information on five distances, including on flaws in the aerial system.

Exporter: Electroimpex Sofia, Bulgaria, 17 George Washington St. Phone: 8-61-81 Telex: 022 075

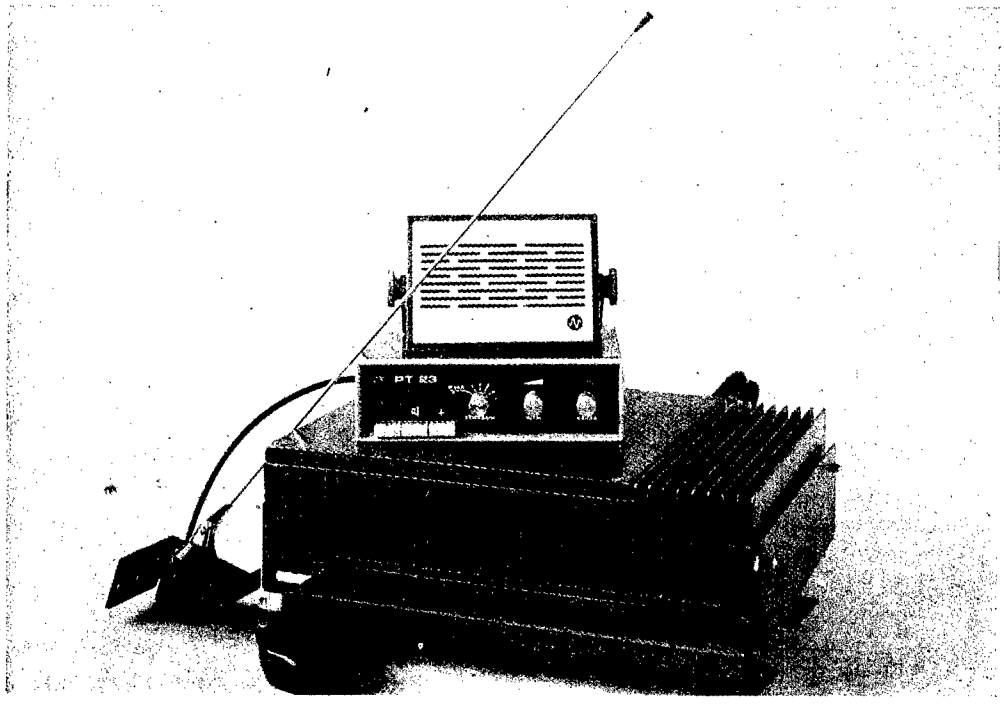


The radiotelephones exported by Electroimpex are compact in size and light in weight.





Radio transmitter-23 finds universal employment as a basic unit in the development of various modifications.



NATIONAL TELECOMMUNICATIONS INDUSTRY TO BE GIVEN PREFERENCE

Rio de Janeiro O GLOBO in Portuguese 24 Jun 78 p 22

[Text] Brasilia--"In order to make decisions independently in the telecommunications field any nation must have the technological and administrative decision centers of these industries located in the country itself."

This is the basic objective of the document approved yesterday by the Ministry of Communications, according to a statement by Minister Quandt de Oliveira.

For all types of equipment and material which will be purchased by the firms connected with the Ministry of Communications, the document establishes a policy which has already been established by us, but only for certain types of equipment: preference for products manufactured by national industries.

Basic Objectives

The document establishes the following basic objectives for the policy of purchase of equipment for telecommunications technological development:

1--To reach an adequate level of autonomy in order to make it possible for decisions of industrial and technological nature of the telecommunications sector to be made within the country.

2--To make the sector less dependent on importation of materials, components, equipment, services and engineering projects.

3--To create conditions for the development of Brazilian telecommunications industries, economically self supporting and capable of generating and developing their own technology, independently or with the support of research and development organizations.

Strategy

According to the BNDE [National Economic Development Bank] report, in spite of the existence of over 50 national industries in the telecommunications

sector at the present time, they are responsible for merely 4 percent of the national market. Minister Quandt de Oliveira does not disagree with these data, but neither does he see the need to create, or even expand a line of credit to strengthen national firms in the telecommunications sector.

The document attempts to establish the conditions for production cost reductions, installation and operation of equipment and materials used in the sector, as well as "to maintain to the maximum the system of free competition, thus preventing a monopoly of the market or its fragmentation."

The minister is trying to interest private national groups with the incentives created by the document and support of the Brazilian legislation. There still is "no study for expanding financing conditions for the sector.

Basic Directives

The firms connected with the Ministry of Communications--states the document--will be able to purchase imported equipment only in case when there is no similar equipment of domestic manufacture, or when during the presentation of corresponding bids, no bids were presented for the supply of equipment manufactured in Brazil.

However the minister said, "I must admit that the document we are approving was prepared without the participation of the representatives of the industry. Therefore, now we must state that the terms of the document are not inflexible and can be changed (not substantially) after discussions which could be had with the representatives of the producing groups."

Another directive of the document establishes that "equipment whose manufacture demands large investments in production goods (multiplex, stored data centers and so forth), making it impossible to plan long-term production, could be acquired through the process of market division and, therefore, through prior selection of suppliers."

As to the acquisition of equipment--says the document--"it must always be oriented toward limiting the number of suppliers by the line of product to a minimum of two in order to insure an adequate level of competition, and to the maximum of four in order to insure the needed economy scale of the suppliers."

Preferential Equipment

Market incentives will be granted to industries installed in the country for the production of preferential equipment, according to the document which gives the following definition for this equipment:

"Equipment which has technical, operational and/or construction characteristics and uses components stipulated by Telebras [Brazilian Telecommunications Corporation]."

Preferential equipment will have priority for the use in the national telecommunications system, and for this purpose market incentives will be granted to industries established in the country for its production. According to Quandt de Oliveira, the definition of preferential equipment will imply, during negotiations envisaging transfer to Telebras, the rights for their manufacture in the country.

In this manner, if one multinational industry accepts to have its product considered as "preferential" for the national telecommunications system, this industry will have to desist from sending royalties to its home office.

According to the document, "the Ministry of Communications will study ways of giving support to industry for establishing pilot-lines of production of components whose use in the equipment of the national telecommunications system would not insure economies on a scale adequate to be self-supporting for making its manufacture viable."

11634
CSO: 5500

RADIOBRAS REFUTES CHARGES OF FOREIGN RADIO PENETRATION

Rio de Janeiro O GLOBO in Portuguese 18 Jun 78 p 4

[Text] Brasilia--"At this time I can guarantee that the index of listeners of foreign radiobroadcasts in Amazonia, including Radio Havana and Radio Moscow, is not higher than 2 percent," said the president of Radiobras [Brazilian Radiotelegraphic Company], Col Idalecio Nogueira Diogenes, yesterday.

The information given by the president of Radiobras refutes the statements made by the director-manager of Radio Nacional in Boa Vista (Roraima Territory), Francisco Galvao Soares, who charged at the beginning of last week that there was penetration of foreign radio stations in the Amazon Region. According to Galvao Soares, some countries expanded their radio programs to Brazil, obtaining good audiences by aiming their transmitters to the Amazon Region, after Radio Nacional suspended its programming abroad.

Among these foreign radio stations which allegedly succeeded in increasing their audiences in that region the representative of Radio Nacional in Boa Vista pointed out those of Havana and Moscow. According to him, these radio stations "have increased their power to 300 kilowatts, and turned their antennas specifically to reach Amazonia, with the aim of neutralizing the programs of Radio Nacional."

For Idalecio Nogueira Diogenes the concern shown by the director in Boa Vista is without foundation. "Because of lack of options," said Idalecio, "some years ago the majority of listeners who live in that region, especially those in the border cities, listened a lot to foreign radio stations, among them to Havana and Moscow.

"However, after Radio Nacional began giving more attention to that area, the index of listeners to the radio stations of other countries dropped from 100 percent to the maximum of 2 percent."

According to the president of Radiobras, the firm does not have available the means to verify the increase of power of the foreign radio transmitters, as was charged by the director-manager of Boa Vista, because of lack of verification equipment, "since we do not have informers in Moscow, and much less in Havana."

11634
CSO: 5500

BRIEFS

FUJITSU COMPUTERS--The first minicomputer marketed by Eletronica Digital, S.A. (Edisa)--imported from the Japanese firm Fujitsu--should be on the market in September or October of this year. The model will be the ED-311. This information was given by Ana Maria Mandeli, director of that Rio Grande do Sul firm, who took part this week in the first meeting on Software for National Minicomputers sponsored by Capre [expansion unknown], in Rio de Janeiro. The Edisa aim in marketing the ED-311, is to familiarize the market with the equipment to be produced by it and which should reach 100 percent index of nationalization in 1981. The Edisa--a holding company of 12 Rio Grande do Sul firms and minority participation of the Banco do Estado of Rio Grande do Sul, the Companhia Estadual de Processamento de Dados and the Banco de Desenvolvimento Economico--was one of the four firms selected by Capre for the production of national minicomputers. [Text] [Rio de Janeiro O GLOBO in Portuguese 16 Jun 78 p 26] 11634

CSO: 5500

MERCEDES AIRFIELD GETS WEATHER STATION

Montevideo LA MANANA in Spanish 21 Jun 78 p 8

[News dispatch by Daniel Rondan]

[Text] Mercedes--The new Mercedes weather station, situated at the Ricardo Detomasi Airport, was opened in the presence of high authorities, headed by the deputy minister of national defense, Armando Chiarino.

The building was constructed entirely by the Soriano Municipal Administration, which provided the necessary experts, materials, and personnel, while the Uruguayan Weather Service furnished technical help.

The new station, considered among the most modern and important outside of the capital, will operate continuously between 0530 and 2100 hours, providing information on the weather, recording meteorologically controlled temperature readings, wind direction and speed, cloud conditions, moisture, sunlight, evaporation, etc., in this area. The information, which will be transmitted within moments througout the country, and abroad as well, will be extracted from the data furnished by the various instruments installed in the weather station, the park, and the office; they are thermometers of various types, evaporimeter, a thermohydrograph, a pluviograph, a barometer, a barograph, an anemometer, a wind speed and direction indicator, etc. It should be noted that the new station forms part of the development project of the Uruguayan Weather Service, with aid from the United Nations [Development] Program, and will support activities in the fields of agriculture, industry, tourism, air and sea navigation, education, etc.

The Inauguration

At the inauguration ceremony, following the signing of the national anthem, the Soriano municipal administrator, Col Juan C. Salaberry, spoke. In handing over the project he emphasized the fact that one more municipal goal, this one of nationwide significance, had been met, providing a source of pride for the departmental community.

The director general of the Uruguayan Weather Service, Air Col Fernando J. Arbe, commented on the erection of the station and stated that it forms part of a plan embracing new projects in this field, with important support from the United Nations Program, which will culminate with four new stations, including those to be inaugurated soon at Tacuarembo, Rocha, and Minas.

With the cutting of the ribbon by the deputy secretary of the Ministry of National Defense, Dr Chiarino, to inaugurate the project, the authorities and members of the press proceeded to visit the brand new installations.

9015
CSO: 5500

CAMPAIGN TO INSTALL TV REPEATER TOWER UNDERWAY

Montevideo LA MANANA in Spanish 29 Jun 78 p 12

/Text/ Paso de los Toros -- The local Lions Club has been working actively to implement the installation of a repeater tower to permit reception of Uruguayan television channels. To learn more details and the reasons motivating the project, LA MANANA interviewed the secretary of that organization, Julio C. Medina.

"It is obvious," said Medina, "that the television channels that are received most clearly are the Argentine channels. We must remember that our city is 250 kilometers from Montevideo and only 150 kilometers from the Argentine border and that causes the national channels to be received here unclearly and sporadically.

"That," continued our interviewee, "creates a number of problems that may divided into three groups, as follows: 1) from the national point of view; 2) from the social aspect; and 3) from the cultural aspect.

From the national point of view, we know more about the situation in neighboring countries than our own. The news broadcasts of those channels, their sports programs or even the simple entertainment programs are causing the local population to become detached from the national situation.

"From the social point of view, since television is a menas of communication that has few competitors as a pastime, the influence it may have on the viewer is extremely important because what he sees and hears pertains to other societies, to other symbols, to other personalities than our own. Just think," declared Julio Medina, "how harmful this may be for the upbringing of our children."

"Finally," said our interviewee, "it is no less important from a cultural viewpoint.

"I believe," he continued, "that it can all be tied together into one big problem. I believe the project we are undertaking is essential. Through television we can give all of our people a view of the life of our country."

The secretary of the Lions Club concluded as follows:

"We Isabelinos want the picture on the television screens to be Uruguayan. We want our children to learn to love what is ours; to venerate our heroes. We Lions have the support of all the people and we will implement a project that cannot be put off."

8711
CSO: 5500

GROUND STATION SOON TO BEGIN OPERATION

Damascus AL-THAWRAH in Arabic 8 Jun 78 p 3

[Text] Following the submission of the report of the Commission of the Syrian Ground Station for Communications via Satellites, an order has bee issued by his excellency the prime minister for the utilization of the station without regarding this order as an acknowledgment of receipt. Thus, the legal rights of the organization and the region will not be affected regarding the company which has promised to deliver the station fully operational as stipulated in the contract, considering that the company has not yet finalized its work and the installation of the station's equipment.

His excellency the director general of the General Organization for Cable and Wireless Communications has passed a resolution placing the Syrian Terrestrial Station into effective utilization.

For the first time an installation has been put into operation without mass media clamor and even without an official ceremony. Final tests are currently being carried out and have been described as successful. The station has been placed into effective operation to secure direct telephone, telegraph, and telex communications between the Syrian Arab region and the regions of the Orient and the countries of the world in addition to transmission and reception of television programs.

Specifications of the Station

It took almost one year to complete the studies and plans. Actual work on the station began at the end of 1975. It was decided that the work and tests should be finished and the station ready to serve the public in and outside the region at the end of April, 1977.

A French company was chosen to execute this important project.

The station consists of a number of buildings and installations including: the electric power building; the antenna tower building; the administration building; the equipment; and the living accomodations.

It is worth mentioning that the station is one of the most modern ground stations available especially in its electronic equipment and its antenna equipped with solar mirrors, 37 meters above ground level. The radius of the disc which resembles a plate, is 32.5 meters and it weighs 80 tons. It moves automatically in two vertical and horizontal angles aided by computers for tracking and control. It has been decided that the station's antenna shall be directed toward satellites over the Indian Ocean. This direction shall secure telephonic, telegraphic, and telex communications, and reception and transmission of both black and white and color television programs between the Syrian Arab region and sister Arab regions and the countries of the outside world.

Uses and Services of the Station

The station consists of 72 telephone lines sufficient for the region's need for telephonic, telegraphic, and telex communications directly with the Arab regions and foreign countries. It is worth mentioning here that the station contains tracking and control equipment which work electronically to direct all station equipment, including the special antenna, considered one of the most modern in the world. The station connects with all automatic telephone exchanges and television studios in Damascus with a capacity of up to 960 telephone lines and is expected to be effective on microwave between the station and Damascus, the automatic telephone and the television station.

The station's capacity and size will be enlarged in the future according to the region's increasing needs. This station will serve as the heart serves man's body, making it a liaison between the world and the region and their establishments and will serve telephone, television, and news establishments and others.

The Station's Effects on the Lives of the Citizens

1) It will provide every citizen with a facility to speak directly from his house with any part of the world, for any period desired at minimum cost.

2) It will be possible for people in business, medicine, economics, the media, and even politics to hold their conferences and meetings via television cameras and on the screen.

3) It will be possible for any television set owner, through the manipulation of a few buttons on the set, to watch page after page of any book on world history or on any country of the world.

The use of such a station has become a necessity. It can carry telephone calls, telegrams, and news as fast and as easily as possible. Thus the Syrian Arab citizen will be able to become aware of the dramatic events taking place in the world as soon as they occur.

The Station's Employees and Its Cost

The contract between the Syrian General Organization and the French company stipulates that Syrian technicians will be trained to supervise the station. Thirty Syrian experts have been already trained to supervise, assisted by the French experts. The cost of the station, which is required by the contract to be handed over in a full operation, was estimated at 30 million Syrian pounds.

A Glance at Foreign Stations in the World

Ninety countries subscribe to the International Organization for Communications via Satellites, INTELSAT. There are around 125 stations currently owned by 80 countries. The names of the satellites on which our ground station will rely are INTELSAT - 4, F3 and F4. These satellites are replaced every year by new satellites when they run out of fuel.

It is only appropriate for us to say here: Compared to the Arab and less-developed countries, the Syrian Arabs have the right to be considered technologically advanced. Syria has its own station, unlike many of the other countries whose stations are controlled by foreign countries.

9279
CSO: 5500

BRIEFS

AUTOMATIC EXCHANGE INSTALLED--Damascus--Work has begun on the installation of the first international automatic exchange which will provide direct telephone communications between the Syrian Arab Region and sister Arab regions and the countries of Europe and America. A Syrian Arab News Agency correspondent has learned that completion of the work is expected at the end of the current year as a preliminary step toward placing the new exchange in effective service at the beginning of next year. This exchange will contribute effectively, after its placement in service, to facilitating and developing international communications and providing subscribers in the region with the ability to communicate directly with subscribers in the sister regions and countries of Europe and America. On the other hand, an agreement has been reached between the General Organization for Cable and Wireless Communications and the General Company for Concrete Work to construct the electronic telephone exchange building at Bab Sharqi with a capacity for 10,000 new telephone numbers to serve the district of Bab Sharqi, Mukhayam Al-Yarmook, "The Yarmook Camp", and the villages of Qabr-us-Sit and Jirmana. [Text] [Damascus AL-THAWRAH in Arabic 4 Jun 78 p 4] 9279

CSO: 5500

BRIEFS

NDJAMENA'S TELEPHONE NETWORK'S MODERNIZATION--Lyon Cables, an affiliate of the CGE [General Electric Company], is installing a network of telephone cables in J'Djamena, the capital of Chad. The first stage of the work--installing aerial and underground cables--involves connecting telephone exchange No 2 in N'Djamena. The 414,000,000-CFA-franc program (about 8,300,000 MF [Moroccan francs]), financed by the French Aid and Cooperation Fund and carried out by Lyon Cables, will make it possible to modernize and extend the Chadian capital's telephone network. It is the beginning of the first phase of development of the network, whose capacity will be brought to 4,400 lines after next March. [Text] [Paris ELECTRONIQUE ACTUALITES in French 23 Jun 78 p 10] 8946

CSO: 5500

RADIO MALI'S PROBLEMS, PLANS DISCUSSED

Bamako L'ESSOR in French 31 May 78 p 5

[Text] For nearly a month now, the listeners of Radio Mali in Bamako and its suburbs have been finding it difficult to pick up our national station; in outlying areas this has been the case for a longer period. In response to the many questions which have been posed by various people, Yaya Bagayoko, minister of the interior and telecommunications, gives the following answers describing the actual state of affairs. At the same time he reassured the public with respect to conditions of reception in the very near future for Bamako in particular, and in the relatively near future (18 months) for the people of Mali in general.

"The difficulties experienced by the inhabitants of Bamako and surroundings to pick up Radio Mali on the 209-meter wave length are due to the fact that an essential part of one of the 60-kilowatt transmitters has been deteriorating for more than a month. We have had to patch up an old one-kilowatt transmitter in order to be able to continue broadcasting while we are awaiting the arrival of spare parts which are needed to put the transmitter serving the Bamako area back into operation.

"We are well aware of the inconvenience caused our listeners in this area, some of whom might have thought that their receiver was defective--even though this small inconvenience contrasts with that suffered by the remainder of the audience of our National Broadcasting System. We can reassure all our listeners by announcing that the government has taken all necessary steps to obtain this essential part with the least possible delay. Besides, the director of the technical division of Radio Mali went to France and Czechoslovakia to purchase the part, and it is expected that the transmitter will be back in normal operation during the month of June.

As concerns the inhabitants of outlying sections, they usually listen to Radio Mali on shortwave. But our shortwave transmitters which were made in Czechoslovakia date back to 1962 and have been operating since that year. Since this model is no longer in production, we are forced to make constant adjustments on these transmitters which are about to expire.

"What about the transmitters on Kati Road? Some people will ask this question. In this respect we must specify that these Chinese-made transmitters were conceived and installed for broadcasts beamed abroad and they cannot in this case be used to cover our national territory.

"Very fortunately, we have been able to obtain a loan of approximately two billion Mali francs from the Federal Republic of Germany which will allow us to buy two shortwave transmitters (of 100 and 50 kilowatts) and one standard broadcast transmitter (of 100 kilowatts). This project is beyond the study stage and is entering the execution phase as we have already received bids from firms who are interested in building these transmitters. We have been assured that the installation will be completed by the end of 1979. Thus, Radio Mali will be in a position to provide quality listening to its audience throughout the national territory within 18 months."

Finally, Yaya Bagayoko broached the subject of television in Mali and stated that this project, which has gained a great deal of attention within the government, "is ripening" and that our country will enjoy color television directly upon completion.

9261
CSO: 5500

DIRECT RADIO-TELEPHONE COMMUNICATIONS WITH ASTOVE ESTABLISHED

Victoria THE NATION in English 10 Jul 78 pp 1, 2

[Text] The Government-owned island of Astove is the latest of the outer-islands of Seychelles to have direct radio-telephone communications with the rest of the country.

The system was set up this morning and one of the first calls was from Mr Raoul de La Fontaine of the Department of Agriculture and Land Use to the headquarters of the Information Services.

Mr de La Fontaine, Field Officer for the Outer-Islands said that they started work on installing the set at six this morning and had it ready for testing two and a half hours later and that's when he called our headquarters.

He said there had been no problems either in the the crossing from Mahe by the Nordvaer or in setting up the equipment.

Astove, like the other islands already having two-way telephone contact with Mahe, has to go through the Cable and Wireless Transmitting Station at St Louis to be connected to the public system. This morning's test call though faint, was clear.

Government announced last year that islands would have to install two-way radios so that the people working there would not be cut off from what was happening in the rest of the republic and also to enable help to reach these islands as soon as possible in case of sickness, accident or other emergencies.

Better communication with the islands also form part of government's plans to develop fully all of our territory.

The first installation was made on the state-owned island of Farquhar and the first call from there was to the President from the Minister for Works and Port Mr Philibert Loizeau.

According to Cable and Wireless, telephones are available on Farquhar, Desroches, Astove, Assumption, Poivre, Darros, Desroches, Aldabra, Alphonse, Platte, Coetivy, Bird, Dennis, Silhouette, North, Praslin La Digue and, of course Mahe.

CSO: 5500

BRIEFS

GROUND TELECOMMUNICATIONS STATION FOR SHABA--The ground station for telecommunications by satellite, currently under construction on the Kipushi road, will be operational for the whole Shaba region by the end of next June, Mr De Lannes, president and general manager of the Thompson group revealed on Tuesday during the courtesy visit he paid to the region's commissioner, citizen Efambe Y'Olanga. Mr De Lannes stated that the station will become totally operational in November, when Lubumbashi will pick up broadcasts and televised programs from Kinshasa. Also at that stage, the Shaba region will be able to communicate by telephone or telex with the capital, without difficulty. In addition to the Lubumbashi station, which will be the first of 13 stations anticipated for the interior of the country, the Shaba area will be given two other similar stations at Kalemie and Kamina during the next year and two television centers to be installed at Kolwezi and Likasi. Mr De Lannes revealed that by this telecommunications system Zaire will be the second country in Africa--after Algeria--to have ground stations at its disposal. The equipment will be more complete than Algeria's. The region's commissioner paid ringing homage to the revolution's Guide for having given first to Shaba this telecommunications system, which is an important factor in the region's development. Citizen Efambe assured the "Thompson" group of the collaboration and support of the region in accomplishing its work. In the afternoon, with his host, he went to the worksite. Situated 10 km from the city center on the Kipushi road, the future ground station of Lubumbashi is part of the vast program set up by the Executive Council with the Thompson group, to give Zaire an improved system of telecommunications by satellite. [Text] [Kinshasa ELIMA in French 21 Apr 78 p 4] 8946

CSO: 5500

POSITION IN WORLD MARKET FOR TELECOMMUNICATIONS SATELLITES

Rome AVIAZIONE in Italian Jun 78 pp 334-335

/Article by Igino Coggi: "Telecommunications Satellite--Room Also for Italy"/

/Text/ An agreement on Italian space activities brought up the need for Italy--after the success of Sirio and the improvement of its space industry--not to remain away from a nascent market which demonstrates enormous expansion possibilities.

"The purpose of the space industry requires definition. Many people believe that space is a 'place' from which one can derive profit, making products both for their use, in space, and on earth. In a broader sense, 'space' covers the activities which make both real and perspective use of outer space. Thus, space industry means telecommunications industry today and prospective commercial use for many other applications tomorrow." With these words, Antonio Teofilatto, general manager of CNA (National Aerospace Company) opened the convention on "Italian space activities--orientations, prospects, proposals," which the scientific research section of the Christian Democratic Party organized at the party's headquarters in Rome-EUR /Universal Exposition of Rome/ last 23 May. Teofilatto was not the only speaker. Broglio, Scandone (chairman of the space committee of the CNR /National Research Council/), and Malavasi of the SAS /Space Activity Service/CNR, as well as Elia, of the office of the Honorable Postal also spoke. This was followed by remarks made by the latter and by scientific research minister Antoniozzi.

The convention brought up the need for Italy--which by right is already a member of the "space club" by virtue of its international activities and due to the achievement of Sirio--not only not to abandon the positions gained but also to consolidate those positions through a series of both national and international programs which can give Italy a position of prestige also in the nascent space industry. After confirming the importance of space research for scientific purposes, it is necessary to strengthen the economic aspects of space activities not only with regard

to the industries involved in this effort but also for the sake of the national community as a whole. A single figure will suffice to demonstrate this: In 1975, Intelsat, the international organization for the exploitation of satellite telecommunications, consisting of 95 nations, including Italy, earned $140 million, while two years ago the private companies in the United States alone--which are involved in telephone and data transmission on a national scale--had a business volume of $50 million. The 1977 total worldwide business volume for space telecommunications services can be estimated at at least half a billion dollars while the utilization of space for peaceful purposes has caused companies and establishments to spring up everywhere in the telecommunications sector with investments on the order of billions of dollars and with thousands of stations. Space thus is no longer a purely scientific "fact" but is being transformed into an industrial "fact." This opens up an international market of vast proportions from which it would be illogical for Italy to stay away.

"In this 'commercial' game," Teofilatto said, "we are certainly justified in asking ourselves what the profit is. For telecommunications, the final advantage is a social one and it is relatively clear: The improvement of long-distance connections in terms of efficiency, fidelity /reliability/, and capacity is paid for--in long-range terms--by the decrease in the need for movements by persons; we thus get an improvement in the communications capacity without the negative result of an increase in traffic and with the subsequent problems due to population growth. The industrial profit is quite evident: The increased demand for telecommunications traffic involves equipment in orbit and on the ground which must be evermore sophisticated and widespread; we thus maintain the employment level in this sector, we direct employment toward the study and application of technologies which are evermore in line with service requirements; we broaden the service sector with a subsequent increase in employment. Regarding the study of the earth, there is no real company profit as such, except in the manufacturing sector. The goal of deriving advantages here is only a social one and goes beyond national geographic terms toward the search for global prosperity on a worldwide scale. This is not true of the other long-range applications which represent an evolution of the concept of public utility enterprises."

	Satellites in Orbit during year given				Launched during year given		
Year	Total	Class			Class		
		3	2	1	3	2	1
1980	69	34	24	11	3	9	4
1981	77	36	28	13	7	8	3
1982	88	39	32	17	5	8	5
1983	88	39	30	19	3	7	3
1984	91	40	31	20	4	6	6
1985	96	42	33	21	10	5	4
1986	99	44	34	21	8	4	2
1987	106	49	35	22	10	4	3
1988	113	52	38	23	7	9	3
1989	114	52	39	23	6	6	3
1990	117	53	41	23	6	6	4
Total satellites requested					69	72	40
						181	

Class subdivision		
Class 1	Beyond 1,100 and 1,200 kg	40
2	Between 800 and 1,100 kg	72
3	Less than 800 kg	69

Figures given with reference to the mass [weight] in transfer orbit

Until now, the obstacle to the industrial exploitation of space has been represented by the costs which were kept high also due to the use of expensive vehicles which could not be recovered. The situation will change in the near future, over the next 3 or 4 years, at most, with the introduction of the space shuttle, the NASA space vehicle which should be able drastically to cut the costs connected with placing satellites in orbit, in other words, cutting the costs to one quarter or one fifths of current costs. The decade to come will thus--to a great extent due to the space shuttle itself, whose employment will not be confined to exclusively American missions--bring the beginning of a new phase in space activities and, as the CNA general manager said, "a proliferation of the practical application sector, especially in telecommunications, where we will see the survival of only those industries which, having made the proper preparations, will be able to offer competitive 'products.'"

What, then, will the market offer and what can we expect from that space industry? During the decade of 1980-1990 it is logical for us to expect requests for four categories of satellites: Regional and domestic communications; special communications and mobile equipment; television broadcasting; big international combines (of the Intelsat type). Considering the tendancy toward an increase in the weight in orbit--which can be achieved by replacing the currently orbiting satellites with satellites having a greater capacity and greater dimentions--one of the speakers at

the convention, Giampiero Elia ("Economic Aspects of Space Activities"), in particular singled out three classes of satellites applicable to the eighties and a good portion of the following decade, with the following weights: "Less than 800 kg, class 3; between 800 and 1,100 kg, class 2; more than 1,100 kg, class 1; they correspond to three boosters (today they are of the 'rocket' type; starting in 1981-1982 they will be of the 'shuttle' type plus one auxiliary 'rocket' stage). Available market studies indicate that the regional traffic functions will be carried out with class-3 satellites. The class-2 satellites will be necessary for multipurpose missions or for heavy regional traffic volumes (for example, domestic traffic in the United States today; or inter-Arab traffic during the nineties). Class-1 satellites will be needed for the operation of the international network." Italy today has the possibility of getting into this new market and, as Elia continued, this is "due to the capacity demonstrated through the achievement of Sirio, in other words, a satellite with a simple design but with second-generation and third-generation technologies, such as they are required for the development of telecommunications during the eighties."

This is by no means a negligible market. In his report, Elia considered feasible another 150 geostationary satellites in orbit over the next score of years (as against the current 50), with the construction and launching of about 400 satellites between 1980 and 2000, including 150 during the decade of 1980-1990. Teofilatto, on the other hand, assumed that there would be 117 orbiting satellites in 1990 and that 181 launches would be necessary, calculating the average life of a satellite at 7 years. In particular, estimates range from a minimum of 121 to a maximum of 411 satellites whose maximum and minimum data, depending upon the type of application, would be as follows: telephony, 364 and 101; direct television, 25 and 10; mobile systems, 22 and 10; at an average cost, per satellite, of between $15 and $20 million. The figures for the entire world market therefore can be assumed to be between a minimum of $1.8 billion and a maximum of $8.0 billion (Teofilatto, in this connection, believes that a figure of $3 billion for the decade of 1980-1990 will be most probable). Since one-third of that figure is taken up by launch and orbiting costs, the market slice for the space vehicle building industry should, on the average, come to $2 billion which, expressed in current figures, would be $1.7 trillion Italian lire. But this is only the market pertaining to the portion that is in orbit and to that we will add the market for ground stations. Here, international estimates range from $2 to $7 billion with an average of $5 billion for 26,000 terminals. Nor must we forget the /support/ services which during the decade of 1980-1990 could constitute about 10% of the investments of the ground network.

Should Italy seek access to that market within an exclusively national setting or in an ESA context? The meeting brought up the need for Italy to move toward national solutions rather than "European ones"; it turns out to be difficult to take the steps toward the assumption of a system role in the field of space telecommunications--whose harbinger was the Sirio program with whose help Italy today is being sought as a partner, in its own

right, in the advanced telecommunications sector--within a context, specifically, that of the ESA, where the inadequate share of Italy's contribution (on the average between 14 and 18% out of the total of each program) is contrasted by the position assumed by Italy's chief partners. The latter (West Germany, Great Britain, and France) as a matter of fact have no intention of abdicating the priority roles assumed by them on projects of a system nature and that is quite logical also. Hence the need for Italy to study projects of this kind by itself and possibly outside the ESA unless Italy is assigned preeminent roles in programs of this kind within the European space agency, something that is rather difficult. "This is not intended to assert a principle of 'autarchy,'" maintains Teofilatto. "By participating in ESA, Italy benefits from its presence in the European technological context and contributes to the sectors assigned to it although its participation is a minority participation so that Italy will be working on the basis of decisions made by others. That will restrict Italy's autonomy in the adoption of its own future systems and in terms of the possibility of expanding its own market. We must realize that France and Germany--although they are the leading nations in ESA policy and although they have established system capacities in their industries--carried out a two-nation telecommunications system, called Symphonie, which it is believed can be followed by a second project precisely for the purpose of penetrating the international market. This is why the possibility of penetrating the international market entails greater qualification and a further step beyond Sirio which is possible only within a national context."

Leaving to the Americans those sectors in which they alone can achieve something acceptable both technologically and economically, given the dimensions of their industry, interest should logically be aimed at those products whose manufacture is feasible because of the potential of Italian industry and above all at those which are not monopolized by the United States. In the field of telecommunications, therefore, satellites involving the Third World and/or satellites planned for national distribution and point-to-point phone services would be involved here, in other words, fields which are open to rapid expansion soon. There is enough room. This is true also because the United States will no longer be able--by its own admission--to hold on to its primacy in this sector; American space budgets have revealed cutbacks also in the satellite telecommunications field with programs which from $40-60 million annually for the period of 1968-1973 were scaled down to $10-8 million available from 1975 onward. Proof of this is furnished by the increase in non-American participation in Intelsat. Until Intelsat IV, as a matter of fact, foreign participation was not more than 5% whereas now, with Intelsat V, we have almost 30% foreign participation.

The moment is therefore propitious and Italy holds all the cards needed for getting into an interesting, technologically qualifying and economically lucrative market. By adopting economical launch systems and by directing investments toward product standardization, it is possible to keep the cost around $15 million per satellite. In this connection, Teofilatto pointed out that "to aspire to the role of an European manufacturer of satellites to be used in regional services, Italy will furthermore have to have an

auxiliary launch vehicle for the NASA shuttle which--combined with the satellite--will permit maximum global economizing. (This vehicle will be salcable as a subsystem for other launches of a practical application and scientific nature.) Italian space industry moreover will be able to offer the TV satellite necessary for servicing the country and, as a result of the intelligent exploitation of international norms governing television broadcasting from space, Italy will also be present with offers of service in neighboring areas."

Placing television satellites in orbit should thus represent a business volume between 100 and 150 billion lire for one preoperative satellite, one operative satellite, and two replacements in orbit over about a dozen years, while the creation of a network of ground stations for individual reception--considering only the users in existence today--would in the end generate a business volume in terms of trillions of lire. It suffices to realize that small 12-GHz stations reveal a unit cost--when planned in large volumes--of about 400,000 lire for individual facilities and at least 1 million for multiple condominial setups and that every station has an average life between 5 and 8 years. Even if a market of this kind is essentially national, this does not mean that foreign competition might not come back to it in the absence of proper Italian products. And if we then go on to evaluate the possibilities of exporting space systems or building them on the basis of foreign orders, we would be facing a potential that would be more than just attractive. The opportunity thus exists for Italy's access to international space industry; possibilities for Italy's industry do exist here; it would be absurd for us to allow such a unique opportunity to get away from us.

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CSO: 5500

RADIO STATION FREQUENCIES TO BE REASSIGNED

Madrid CINCO DIAS in Spanish 17 Jun 78 p 3

[Article by Carlos Garcia Cobian: "Radio, a War of Frequencies"]

> [Text] The problem of frequency distribution among Spanish broadcasting stations has to be solved before 23 November. On that date some 50 broadcasting stations will have to change frequency and others will have to go off the air or go to modulated frequency with subsequent economic damage.

The radio enterprise is different in each country but it can be broken down into two groups: one where there is freedom of enterprise as in the United States and the majority of the American countries; and the other where the enterprise is administered and exploited almost exclusively by the state as in the European and Afro-Asian countries. In Europe radio and television enterprises are exploited by the state or by concessionaires of the state which range from monopolies to a number of groups.

The continuation of the state monopoly is in response to the "example" of the French independent broadcasting stations. In addition to Radio Francia, included in the monopoly, there are the so-called peripheral broadcasting stations: Europa-I, RTL [expansion unknown] and Radio Montecarlo. Theoretically they are private enterprises but the state exercises important control. It owns 35 percent of the shares in Europa-I, 90 percent in Radio Montecarlo and it participates in RTL through the news agency HAVAS.

Broadcasting in Spain

The Spanish system of broadcasting is original and inconsistent--original because it is not like any other system and inconsistent because in Spain the waves of the private broadcasting stations mingle with the waves of the state broadcasting stations.

Presently in Spain 181 radio stations broadcast, the majority of them as part of the Chain of State Communications Media. Because of a domestic regulation dictated by the government, broadcasting power varies from 5 kilowatts--the local ones--to 50 kilowatts--the regional ones.

Following the norms of the EBU, there was a thorough restructuring of frequencies that principally affected the union and church broadcasting stations.

The commitments acquired at the 1975 Geneva Conference that will hurt the economic interests of many enterprises must be put into effect before next 23 November.

Because of these commitments three large national chains of broadcasting stations will be established in Spain. The first would include the RNE [Spanish National Radio] network of broadcasting stations which could expand broadcasts with a new long-wave program with two different frequencies and five broadcasting sites throughout the country.

The second national chain would be formed by a conglomerate of broadcasting stations that belong to the state and broadcast under the RCE [Spanish Radio Chain].

The problem is how to distribute the third chain among the private broadcasting stations. There is even the possibility of forming a fourth chain with the 33 frequencies that were assigned in Geneva to peninsular Spain and the Balearic Islands.

The Canary Islands are separate because they have 17 frequencies now and as of 23 November they can have 19.

These measures will principally affect Madrid, Barcelona and Valencia. The capital of Spain presently has eight medium-wave broadcasting stations which, according to the Geneva agreements, will have to be reduced to three. The same will occur in Barcelona and Valencia. In official circles "the possibility of expanding these three regulation broadcasting stations to five but no more" is considered.

What seems clear is that the distribution of frequencies will mean the disappearance of many medium-wave broadcasting stations in several provinces.

State Radio

The broadcasting stations that depend on the state are:

The RNE Chain which is the most important in volume and power of installations, scope of broadcasts and number of personnel. Economically it depends directly on the state through the Ministry of Culture.

Radio Peninsular which is the commercial chain of RNE with broadcasting stations in Madrid, Barcelona, Valencia, Sevilla, Cuenca, La Linea de la Concepcion and Huelva. They depend economically on the Ministry of Culture.

The RCE which is formed by the old chains of the Movement--the CAR [Blue Broadcasting Chain] and the REM [Network of Broadcasting Stations of the Movement]--which together functioned as REM-CAR until taking the name RCE. They also depended on the state through the defunct Secretariat General of the Movement and now the Ministry of Culture.

The Chain of Union Broadcasting Stations which was the network of union broadcasting stations that now depends on the State Communications Media. It was financed by the union organization and now by the state through the Ministry of Culture.

Private Radio

The Chain of the SER [Spanish Broadcasting Association] which is the most important. It includes some 50 stations but only eight--Madrid, Barcelona, Valencia, Granada, Sevilla, La Coruna, Bilbao and Valladolid--belong to this corporation. The rest of the stations are managed by concessions of the SER. This is one of the chains that will be most affected by the distribution of frequencies. At present there is total silence on the subject. The state owns 25 percent of the shares. Its director is Eugenio Fontan, brother of the president of the Senate, and an important percentage of the shares belongs to the family of Garrigues Walker.

The Chains of Popular Waves. The church network has broad coverage and was formed after the restructuring of dozens of small parochial stations. It depends economically on the Church Secretariat of Mass Communications Media. This chain will also be affected by the Geneva agreements but it argues that "we sent our proposal a long time ago but the response is still being delayed."

The Intercontinental Broadcasting Company which at present has the Madrid station, Radio Andorra and four smaller stations and is joint owner of Radio Espana of Barcelona. It is a corporation.

Radio Espana which has a single station in Madrid. It is also a corporation.

According to a member of the Supervisory Commission, the group in charge of uniting all the state stations under the RCE, "this

restructuring can be very beneficial for the private stations. There is the problem of some 900 families that belonged to the Movement and union stations. They presently belong to the RCE and have similar rights as the workers of RTVE [Directorate General of Radio Broadcasting and Television] since the RCE is part of the RTVE although it functions autonomously."

The distribution of frequencies will fundamentally affect the private stations. Nevertheless, these will have to abide by the government decisions. Practically all the private stations that presently broadcast do so by concessions, most of which have already expired. Others operate through a series of provisional authorizations that have been extended until the plan of frequency distribution has been carried out.

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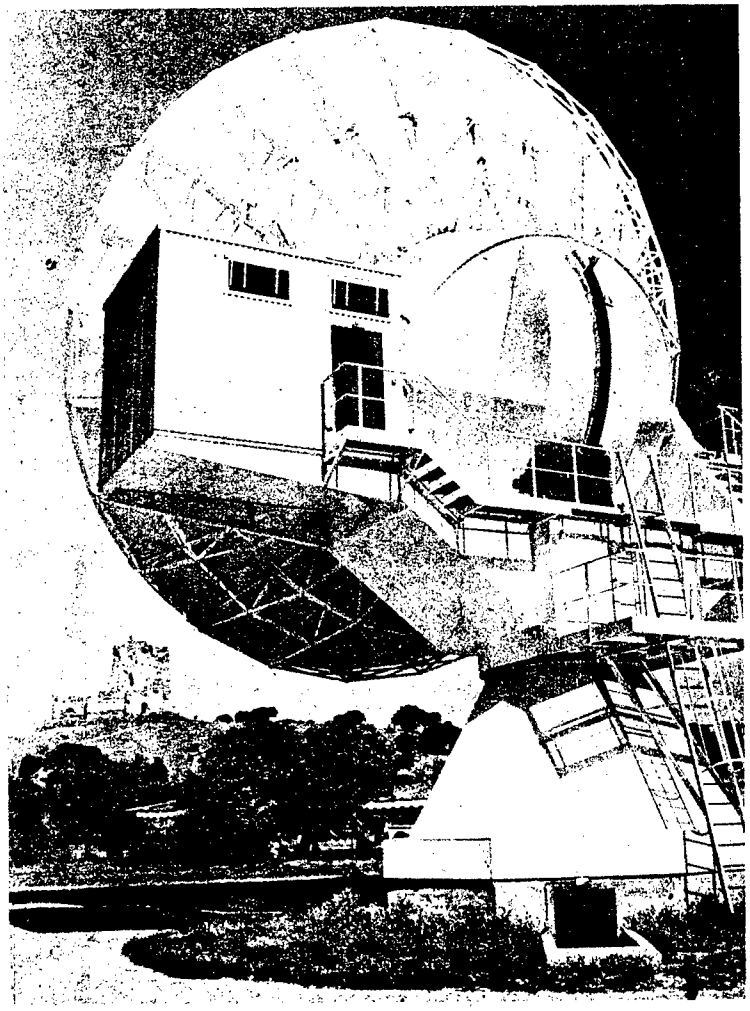
NEW ESA GROUND RECEIVING STATION INAUGURATED

Madrid ABC in Spanish 13 Mar 78 p 5

[Text] Their majesties Juan Carlos and Sofia inaugurated the Spanish ground receiving station of the European Space Agency in Villafranca del Castillo some 30 kilometers from Madrid yesterday morning. They arrived in a helicopter piloted by Juan Carlos and were received by the general director of the European Space Agency, Roy Gibson. The station is equipped with three parabolic antennas 15 meters in diameter.



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CIVIL, MILITARY PROBLEMS WITH CB FREQUENCIES OUTLINED

Frankfurt/Main SOLDAT UND TECHNIK in German Jul 78 pp 351-354

/Article by Col Eberhard Skibbe, GSC: "Problems of 'Everybody's Radio'"/

/Text/ General questions on 27.005-27.135 MHz /Mc/ frequency range and military viewpoints. On 1 July 1978, the youngest member of the German voice radio family--"everyman's" or "CB radio"--celebrated its 3rd anniversary. The group of those who at that time may expectantly have been looking forward to its birth, might--measured by the large number of present-day fans--still have been relatively small. In the meantime however this child has grown to an extent which even the experts never suspected and perhaps did not even want; it has slowly and obviously developed into a problem child, not so much for its parents, the Federal Post Office, but rather for all users who really were supposed to take good care of it. The problems result from the enormous spread of this type of radio operation in Germany in a short time and the attendant density on the few channels which mostly in population concentration areas lead to consequences which nobody can really approve. It is the purpose of this article to describe the existing situation, to analyze it, and to evaluate it also from the military viewpoint.

Through its 22 March 1975 Amtsblatt /official gazette/ no 70,1975, the DBP (German Federal Post Office) released 12 channels in the frequency range between 27.005 and 27.135 MHz for use by "anyone" effective 1 July 1975. It thus--at least in part--followed in the footsteps of a measure which had been taken about 10 years earlier in the United States and which is obviously in keeping with a need of the population (but also, last but not least, a need of industry and commerce related to such activities). The term "CB radio"(1) was also borrowed from the United States and this term in the meantime has become popular in Germany for this communication medium.

Now it however does not happen to be true that the DBP--as the guardian of order in the busy ether--has given "everybody" permission to do anything he pleases in the frequency range described. Naturally, the operation of "low-output voice radio systems"(2) is connected with very specific technical and operational requirements which actually are easy to comply with for "everybody" because one may exclusively use only equipment that was licensed by the FTZ (Central Communications Engineering Office) of the DBP on the basis of a technical type test. This equipment is given an FTZ series test number only if it meets the DBP requirements in terms of its technical characteristics.

In this way, the user's technical activity could be confined only to the installation of the antenna and the power supply line. Since only allaround antennas are authorized, the selection remains rather small. With regard to fixed antennas it is of course necessary to comply with lightning protection regulations and in the case of auto antennas, the TUeV /FRG Automobile Inspection/ has its say for the sake of security (for example, danger of injury during accidents).

Operational rules prescribe that radio operations may be conducted only between mobile stations or between fixed and mobile stations. Fixed stations must not communicate with each other; connection between these stations and other telecommunications media, radio telephone or regular wire telephone, is likewise not permitted. Because industrial plants also legally operate on a high-frequency basis within the same frequency band, protecion of CB radio operations will not provide a guarantee against such interference.

Who Broadcasts and Why?

Now it so happens that the West German citizen's communications needs obviously conflict with the possibilities which the CB radio can offer to begin with on 12 channels with 0.5 w broadcasting power under existing operational requirements. Since CB radio was licensed in West Germany and until the end of 1977, an estimated one million sets was sold to the consumers. The lion's share is taken here, compared to the fixed stations, by the mobile stations, that is to say, sets that are built into motor vehicles and manual voice radios (in CB slang referred to as "manual wheezers" or "manual cucumbers"). This is quite understandable because fixed stations(3) must be registered and are subject to licensing and the payment of fees (currently DM 15.00 per month), while mobile stations(4) are subject only to a "general permit" from the DBP whose wording, to be sure, by way of emphasis, must always be carried with the equipment.

There is no denying that the majority of CB-ers engages in this voice radio operation as a hobby. It has also been proved that most of them have a very pronounced feeling of belonging together which is expressed not only in their clubby behavior but also in real mutual, mostly selfless assistance.

Volunteer aid services were organized and they not only render direct assistance but also pass information on and, for example, give drivers absolutely timely information on the local traffic situation and danger spots. Experience shows that motorized CB-ers quickly build up their own radio circuit whenever there are traffic jams on the superhighways and the traffic situation is passed on within that network from the start of the traffic jam to the end. Anyone who is under way and who happens to be a seasoned CB-er by tuning in early often learns about developing trouble before he reaches the traffic jam and thus can adjust to the situation.

CB radio moreover also gave small companies and crafts enterprises an opportunity for the remote control of their field operations at relatively minor expenditure because of the costs of establishing "exchanges," in other words, fixed stations, today can easily be kept below DM 1,000 while mobile stations cost less than DM 500. It is astonishing to see what kind of technical product is offered in return for this money if one measures it against the costs of commercial radio equipment.

Manual voice radio equipment of rather good quality can be obtained already at half the price, for about DM 250. Cheap models can be gotten even for less than DM 100. It is therefore no wonder that couples and entire families avail themselves of the possibility to communicate with each other over limited distances. But most of the CB-ers at this time consider this a welcome method of engaging in "quasi ham radio operation" without having to go into a technical and operational qualification certificate. This is probably also the reason why so many expressions, which are used in real ham radio operations, are now used in CB radio, although often in the opposite sense. We will take up this problem later. For children and for adults, CB radio at any rate is mostly a welcome toy.

All of that explains the enormous spread of this system. As we indicated earlier, CB radio also has its negative aspects. The fact is that "everybody" is now broadcasting--and we must never forget that. It is quite reasonable to expect that this medium can be kept effective through self-control, patience, and discipline. But there is also unreason here. Without regard as to the communications needs of our fellow man, some people conduct marathon conversations or conversations in progress are interrupted when somebody else cuts in. "Everybody" also includes those persons who invest a lot of money merely in order to bother the others. High-frequency sources are used without modulation and people completely senselessly keep broadcasting music over longer periods of time which makes it impossible to conduct any kind of radio operations on at least one channel in a wide radius. There are people--and they, thank God are the exception--who deliberately operate properly modulated jamming transmitters. In other words, you can also hear malice and unfortunately also indecency going far into the obscene.

One therefore should not complain so much about the children and teenagers, whose frequent interruption of on-going radio conversations on the one hand are due only to lack of understanding and on the other hand mostly are due to receivers that are too weak. Cheap "hand mikes" do of course have the maximum permissible broadcasting output but the receivers are mostly not at all sensitive. But how receptive especially this group of CB-ers is when it comes to complying with broadcasting rules and good discipline is something that all serious adult CB-ers know as they honestly try to talk with the youngsters on the radio and as they patiently seek to teach them.

Problems, Their Causes and Consequences

With few exceptions, all CB-ers try to establish good voice connections over the longest possible distances at any time. From the purely technical viewpoint, this is best possible with fixed stations using good and tall antennas. Then we have, in order, the mobile stations on motor vehicles whose antenna length of course is limited but which, because of the rather good "counterweight," represented by the auto body, in keeping with the particular location, can achieve ranges of up to 20 km, especially when they are talking to well-positioned fixed stations. Most disadvantaged are the manual voice radio units which, in spite of the same transmitter output capacity are very much dependent on the specific location. Here we do not have a good counterweight to an antenna which normally is no higher above the ground than the user happens to be "tall." Connection to an outside antenna is not permitted.

From these facts there follows the, in my opinion, still least serious "CB-er sin"--the fact that, contrary to regulations, busily keep breaking(5) with each other. So long as this is done exclusively with equipment that is licensed by the post office, the post office itself may tolerate this violation because it is understandable and difficult to control(6). The other things that happen here are by far worse and must be critized.

Nowadays the effective range, which can be achieved with the licensed units at an output capacity of 0.5 w, is limited much less by the physical propagation conditions than by the noise level generated by the sum total of CB stations on the channels. The stations often are so heavily superposed on top of each other that it is simply unbearable to listen to this "garbage"(7). Radio broadcasting operations are then possible only over a distance where the field intensity of the transmitter is clearly perceptible at the place of reception above the noise level prevailing there. That amounts to only a few kilometers as the case may be. This trouble could be corrected relatively easily if there were good discipline on the CB channels. But as we said before: everybody is broadcasting.

The need for prevailing over other stations and over the noise level in many, even technically less trained CB-ers leads to reactions which not only are absolutely impermissible but which also magnify the trouble for the other CB-ers and moreover even interfere with or perhaps even endanger other wireless services. In most cases there is no specific knowledge whatsoever as to what really happens in physical terms during this process.

One widespread bad habit, which in most cases is also based on misconceptions, is the use of a "VV microphone"(8). As a rule however the equipment licensed by the post office is also designed in such a manner that a modulation degree of 95-98 per cent can be attained with the standard microphone that comes with the set if it is properly handled. In other words, if everything is properly adjusted, the modulation limiter in the set regulates everything which was put into the input in excess back to where it should be. In other words, the modulation limiter is also adjusted. The consequence in most case then is overmodulation which seemingly brings with it a higher output but which is expressed in the form of distortions. The side effects consist of a broadened frequency spectrum in terms of radiation and sparkover to the neighboring channels.

By the way, any interference in a set as well as the use of accessories not expressly mentioned in the type permit constitutes a violation of DBP regulations and automatically invalidates the operating permit.

Similarly inpermissible are all other measures intended to increase the range, even if they are carried out in a technically correct manner. That includes increasing the operating voltage, for example, by connecting in an external power supply unit, by connecting HF output amplifiers known as "afterburners," and antennas with a directional effect which concentrate the available output in a desired direction of radiation. Far more widespread than the "good" CB-er may assume is the use of so-called "export sets" which are not licensed by the post office and which have higher output performances and more channels. These sets and the afterburners are offered in Germany through specialized and mail-order houses because the assumption is that the "adult citizen" can decide on his own what he can do and what he must not do.

In the beginning we talked about the feeling of belonging and comradeship among CB-ers. Obviously, these qualities have their limits when it comes to getting your way on the channels. People do not even respect channel 9 (27.065 MHz) which is advertised as the emergency call channel. But if you listen in on the "every man's band" you will find that only a fraction of what is said there really has an informative content of a personal or a general nature. Certainly, immaterial conversations are also justified but they should not completely block the way for important information and certainly not for urgent calls.

One natural consequence of the enormous spread of CB radio operations is represented by the fact that the daily press, radio, and TV cover this medium likewise. The evaluations vary. One observation is certainly proper at this point: anyone who wishes correctly to evaluate CB radio and its meaning must--especially in view of the problems described--have personal operating experience of his own, extending over several months. In spite of all of the difficulties which result from the heavy occupation of channels, it is still entirely possible nowadays to make meaningful use of CB radio. This also includes above all the mastery of the language which has taken hold in Germany among CB-ers, astonishingly, almost in a completely uniform manner. But one must also learn to pick up the desired voice from the sometimes very heavy confusion. This can be attained only in a kind of accomodation process, it is impossible on short notice, and it requires much patience. Any premature judgment, which is made without these prerequisites, is therefore questionable, to say the least.

Finally we might mention the fact that many CB clubs are trying to create order and discipline in radio operations. If their efforts were not at all successful, then the situation would certainly be worse. The community of CB-ers however should also close ranks and uncompromisingly move against those who seek to gain advantages over other radio hams through unauthorized measures and means.

Before any request is made for releasing additional channels for CB radio, one should be able to answer positively, backed up by the good conscience of an overwhelming majority, the question as to what has happened to the hitherto released 12 channels in the past.

CB Radio for Military Personnel

If "everybody" is entitled to broadcast on certain frequencies under specific conditions, that naturally also applies to military personnel. One might even advocate the view that these citizens are particularly interested in this, for example, in order to announce their arrival as they return home after travel over longer distances, as they seek to communicate with their partners when they move in convoy, or as they try to establish contact from remote or deserted locations. The many CB-radio-equipped motor vehicles owned by military personnel at military posts and bases confirms that these possibilities are certainly being used frequently.

But we cannot get around the question as to whether the CB activities of military personnel inside and outside military installations can exert disadvantageous effects on military security and on communications facilities. It would be nonsense to try to overestimate dangers here which of course in point of fact cannot be ruled out and to restrict freedom to such a degree that the soldiers might possibly be forced out of the group of persons referred to by the term "everybody." In other words, any necessary regulations must be confined to the minimum which is absolutely indispensable in order to guarantee military and communications security.

The first task of the pertinent commander or headquarters therefore should be to strengthen security consciousness of CB-ers among military personnel and, with the help of examples, to point up the greater dangers inherent in this hobby. Those dangers first of all consist in the fact that soldiers might rather negligently broadcast information which, taken by itself, is not classified but which, when collected and added up, nevertheless could provide hints as to events taking place in the military area, in other words, information which would help enemy espionage. Listening in on this kind of radio traffic is no big thing because the use of so-called "house channels" has become widespread in many regions, in other words, one can "meet and get together" at any time on one of the 12 channels. Elsewhere, a call sign comes first--mostly on channel 9--and one then agrees upon a channel on which the QSO(9) is then actually handled. In both cases it is very simple for an outsider to follow the conversation within a radius of 10 and 30 km. It is thus immaterial whether this kind of radio traffic is conducted inside or outside a military installation. Nevertheless, CB radio operations within military installations entail a greater security risk.

There is an opportunity to use this type of radio operation for reciprocal information, within the context of official operations, for private purposes, in order to save the trouble of taking care of errands; this is particularly true in installations covering large areas, such as air bases, command headquarters, maneuver areas, and depots. To prevent that, one should fundamentally outlaw uncontrolled transmissions from CB units of all kinds within armed forces installations. Surveillance is entirely possible precisely because it is easy to listen in. But that also means that, where CB sets are introduced into military installations, those sets become subject to mandatory registration, giving the call sign. In this way one can restrict the practice of having CB equipment used as camouflage for unauthorized radio sets. This moreover provides indications as to potential activities in this field. Thus it would seem that the requirement for protection has been adequately taken into account. A general band on introducing CB sets into armed forces installations presumably would not only be excessive but would bring up a series of problems.

The many vehicles equipped with CB sets would then have to be assigned parking spaces outside the installations because one could not expect the owners constantly to install and remove those sets. Apart from that, there are now auto radios equipped with integrated CB component and collapsible universal antennas, some of them even motor-powered. This makes effective control very difficult because one cannot assume that guard personnel will have the required technical skills. A comparison to cameras is quite proper here in figuring out a reasonable regulation.

Photographing in and of military installations is of course partly forbidden although carrying cameras as such is not forbidden. Special security areas are subject to special regulations.